CDMP

CLIMATE DATABASE MODERNIZATION PROGRAM

Annual Report 2005

Making Climate Connections

National Oceanic and Atmospheric Administration
National Environmental Satellite, Data, and Information Service
National Climatic Data Center
Asheville, North Carolina

CDMP HAS GREATLY IMPROVED THE ACCESS TO AND PRESERVATION OF NOAA'S HOLDINGS BY BEGINNING THE PROCESS OF MIGRATING THESE DATA TO NEW MEDIA.

NOAA's Stewardship Commitment

The Climate Database Modernization Program (CDMP) supports one of NOAA's core mission functions to archive, store, and manage environmental data and information under data stewardship for the United States. Indeed, these holdings are part of the U. S. National Archives. Many were recorded on paper, film, and digital media, and stored at various NOAA Centers. Prior to CDMP, access to these valuable data sources was very limited, and, being undigitized, these data could not be used effectively. Also, storage technology for the archives was not state-of-the-art; without proper preservation of the media, the information they contained was in danger of being lost forever. CDMP has greatly improved the access to and preservation of NOAA's holdings by beginning the process of migrating these data to new media. The keying of the data and digital preservation of the historic record will not only benefit NOAA, but also researchers and data users in government, commerce, industry, science, education, engineering and national defense. These efforts will also increase data accessibility, and will enable the integration of these historical data sets into the integrated global databases needed by today's climate and environmental data users. The CDMP goal: to make major climate and environmental databases available via the World Wide Web.

CDMP has just completed its sixth year. As it has matured, the program has continued to grow and expand; over the past three years CDMP has supported tasks from all five NOAA line offices. CDMP also works with the Regional Climate Centers, State Climatologists, the U.S. Air Force, the World Meteorological Organization, and foreign meteorological services in Europe, Africa, Asia, and the Americas.

CDMP Program Achievements

The National Oceanic and Atmospheric Administration's Climate Database Modernization Program, partnering with four private sector contractors, has placed online over 45 million weather and environmental images. These historic documents are now available to researchers around the world via the Internet. The amount of data online has grown from 1.75 terabytes in 2001 to over 6.0 terabytes in 2005. Major advances continue in making these data available on the web through a number of NOAA web sites (see URL list on back cover).

The demand for rapid and complete access to the Nation's and world's climate data by researchers and global change scientists was a key driver in the establishment of CDMP, which is managed through NOAA's National Climatic Data Center (NCDC) located in Asheville, NC. This program was initiated by Congress to assist NOAA in modernizing and improving access to the Nation's climate data and information.

Historic weather observations, such as those found on this Fayetteville, VT volunteer observer's record from 1826, are keyed as part of CDMP's Forts project.

Major CDMP Tasks 2005

National Environmental Satellite, Data, and Information Service
Subscription Services
Daily Cooperative Observations: imaging and keying
Hourly Surface Observations: imaging and keying
Upper-Air Observations: imaging and keying
Hourly Precipitation Data: imaging and keying
Defense Meteorological Satellite Program (DMSP) film: imaging
Mechanical Bathythermograph (MBT): digitizing
Lightship data from Sweden: keying
Marine observations: keying
Mexican Daily Data: imaging and keying
Ionospheric Observations: keying
Historical Solar Observations: imaging
Arctic Sea Ice Charts: imaging
On-site support staff
Metadata development
Integrated inventory system development

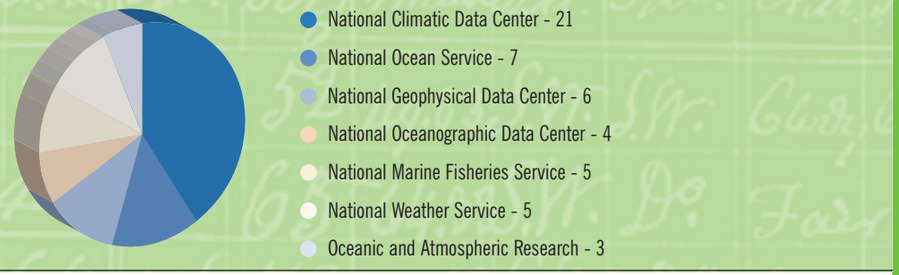
National Marine Fisheries Service
Lightship Observations: imaging and keying
Data Recovery on Cetaceans: imaging and keying
Sea Cat / Bongo Stations: keying
Fish egg & larvae: keying
Reef Environmental Education Foundation: imaging
Historical plankton: keying
Magnetic Tape recovery

National Ocean Service
Shoreline Charts: vectorizing & georeferencing
Nautical Charts: imaging
History of water level gauges: imaging
Historical Coast Pilots: imaging

National Weather Service
African Upper-Air Observations: keying
Surface data imaging: Uruguay & Dominican Republic

Office of Oceanic and Atmospheric Research
WMO Pub 47: keying
Hurricane Reconnaissance: imaging and streaming video
European historical ship logbooks: imaging and keying

FY05 TASK BY NOAA ORGANIZATION

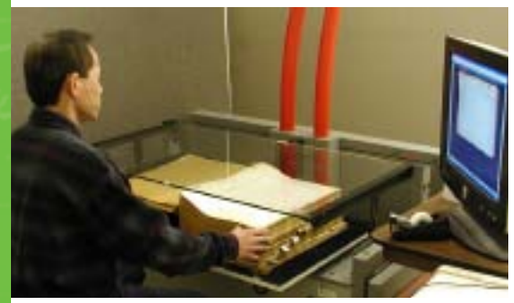


Total number of NOAA CDMP projects reached an all-time high (50 plus) in 2005

CDMP PROJECTS HAVE CREATED SCORES OF NEW PRIVATE SECTOR DATA ENTRY/INFORMATION MANAGEMENT JOBS IN SEVERAL ECONOMICALLY CHALLENGED AREAS IN WEST VIRGINIA, KENTUCKY AND MARYLAND.

NOAA's Partners in the CDMP Project

The CDMP could not exist without the extraordinary efforts of people within NOAA and those in the private sector who do the keying, imaging, and database development. CDMP projects have created scores of new private sector data entry/information management jobs in several economically challenged areas in West Virginia, Kentucky and Maryland. The project tasks supported by CDMP are well suited for the private sector. Many of these tasks have been shifted from government employees to CDMP contractors in the above mentioned states. Tasks performed by these contractors include the printing and distributing of the NCDC serial climate publications, managing accounts receivable, imaging and keying of incoming records, hosting and maintaining the images online, improving station history metadata, and providing expert personnel in support of various projects.



Archive technician imaging historical Pennsylvania climate document, 14 x 19 inches, containing 855 pages, and weighing 47 pounds.

The three prime contractors for CDMP include Information Manufacturing Corporation, Rocket Center, West Virginia; SourceCorp, Mount Vernon, Kentucky; and Lason Systems, Inc., Beltsville, Maryland. Excellent support is also provided by the NCDC on-site contractor, STG Corporation, whose staff prepares much of the data for shipment, maintains inventories, tracks data batches, and performs extensive quality control on the returning data products. With over 50 projects ongoing in a typical year, the contractors must remain focused and flexible to meet each project's requirements.

Information Manufacturing Corporation

SOURCECORP

LASON

STG

Expanding Opportunities in NOAA

CDMP sponsors an annual Data Access Workshop as a forum for information and an experience exchange between the various NOAA task leaders. The workshop, held at various NOAA facilities, allows for the presentation of new and continuing proposals by NOAA agencies for the upcoming year's program. This workshop process allows CDMP staff to evaluate data rescue projects within the NOAA organization. Currently, over 50 projects are supported through CDMP. The workshop forum is expected to continue in the future as data rescue and recovery efforts expand, providing other NOAA agencies a convenient means of accessing the resources of CDMP.

Below are some of the participants in the NOAA CDMP Data Access Workshop held on November 15-16, 2005, at NOAA's Coastal Service Center in Charleston, SC.

A SUCCESSFUL MISSION

The primary mission for NOAA's Climate Database Modernization Program is to digitize global climate and environmental data and make it easily accessible via the Internet. The CDMP program is an example of a successful government project working with private industry to preserve valuable climate and environmental data, and at the same time creating high tech jobs in our Nation's private sector. CDMP's scope has continued to grow since its inception in 2000, with the program supporting 51 NOAA database modernization projects in 2005, a 20% increase over 2004. With a similar increase expected in 2006, CDMP's important contributions to NOAA's data rescue efforts should continue well into the future.

NOAA's International Projects

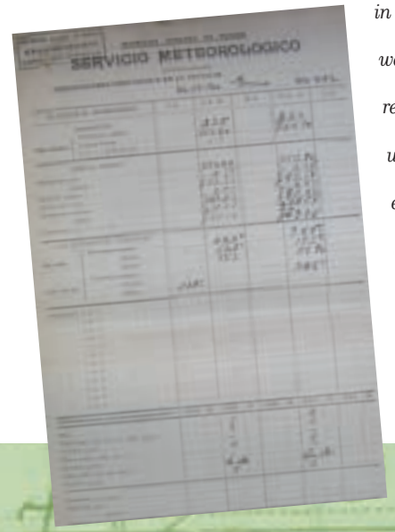
NOAA data rescue efforts under the CDMP program have an international component which fosters cooperation in the exchange of data. In order to have the most complete global database available for researchers and other users, NOAA, under the CDMP program, is rescuing and digitizing data in many areas of the world where there are gaps and holes in available global climate and environmental databases.

Uruguay's historical archives

One of the success stories involves a joint project with Uruguay. A pilot program was set up with the National Meteorological Service of Uruguay to image and digitize historic paper copy records for nearly 25 stations in Uruguay. During the last year CDMP has received nearly 20,000 images of synoptic observations. Recently, the Naval Office of Oceanography, Hydrography and Meteorology in Uruguay has joined the effort, and CDMP is imaging a variety of Naval coastal and lighthouse data collected near and along the coast. In all, the project involves imaging over a million pages of observations.

Cameras and computer equipment to image the data were provided by NOAA's National Weather Service in cooperation with CDMP which plans to oversee keying the records. Meteorologists, technicians, and scientific advisers image the data, which are then copied to CD-ROM and sent to NOAA's NCDC. These images are then used to develop a keying format based on the data and observations received from Uruguay. The keying format will be developed in early 2006.

The images produced in Uruguay will be loaded to a secure server, and CDMP contractors will then key the data. These data will then be added to NOAA's global synoptic database, and a copy of the data files will be sent to the program's partners in Uruguay. Plans are to expand this program elsewhere in the Americas and around the world. This cooperation in rescuing and digitizing data, useful for global climate and environmental studies, benefits all society in many ways.



Imaged record from Artigas, Uruguay, 1942.

Uruguay Meteorological paper record archive.

Courtesy of the British National Maritime Museum, Greenwich

Pocock's Painting of Hindostan

From Ship to Shore

CDMP is supporting several marine projects this year which involve locating, imaging, and keying marine records. Current projects include imaging and keying the 1910-1912 merchant marine logbooks located in the NCDC archives at the Federal Records Center, and additional logbooks collected during the World War I and II eras that were archived but not previously keyed or imaged. In addition, CDMP actively supports keying projects involving current incoming marine observations from Voluntary Observing Ships (VOS) and the U.S. Navy ships. These data are merged into national and international databases.

Additional marine rescue activities include imaging logbooks held at the National Archives and Records Administration. These include lightships off the U.S. coast and in the Great Lakes, the Simultaneous Ship Observations (1874-1902), and other collections as identified.

CDMP is working in conjunction with United Kingdom collaborators in an effort to locate resources to image the marine logbooks in the British Archives and eventually transfer those images to CDMP for keying. CDMP is also working with the Meteorological Service of Canada to key some of the previously un-keyed logbooks from their VOS program.

Courtesy of the British National Maritime Museum, Greenwich

Royal British Navy Logbook April 16-17, 1820.

As part of the overall digitizing efforts, CDMP has keyed 37 million surface hourly meteorological records, extending NOAA's surface synoptic database back to the establishment of some 200 U.S. airport stations in the late 1920s and early 1930s, and to the start of U.S. Weather Bureau city office observations in 1893. The "Forts" project extends that record back even farther into the 1800s by keying the Army Signal Service records, along with other voluntary civilian observations of the period. The earliest record keyed to date is from back in 1789, from lower Manhattan in New York City.

Web Addresses for NOAA Organizations:

National Oceanic and Atmospheric Administration (NOAA)
www.noaa.gov

NOAA's National Environmental Satellite, Data, and Information Service (NESDS)
www.nesdis.noaa.gov

NOAA's National Climatic Data Center (NCDC)
www.ncdc.noaa.gov

NOAA's National Geophysical Data Center (NGDC)
www.ngdc.noaa.gov

NOAA's National Oceanographic Data Center (NODC)
www.nodc.noaa.gov

NOAA's National Ocean Service (NOS)
www.nos.noaa.gov

NOAA's National Marine Fisheries Service
www.nmfs.noaa.gov

NOAA's National Weather Service
www.nws.noaa.gov

NOAA's Office of Oceanic and Atmospheric Research
www.oar.noaa.gov

Selected Project Specific URL's

NOAA Shoreline Data Explorer
www.ngs.noaa.gov/newsys_ims/shoreline/index.cfm

NOAA Coastal Explorer
coastalexplorer.imcwv.com

Defense Meteorological Satellite Program (DMSP)
www.dmsp.ngdc.noaa.gov/dmsp.html

NOAA CENTRAL LIBRARY IMAGING PROJECTS

Daily Weather Maps (1871-2002)
docs.lib.noaa.gov/rescue/dwm/data_rescue_daily_weather_maps.html

U.S. Signal Office Annual Reports (1861-1891)
docs.lib.noaa.gov/rescue/cso/data_rescue_signal_corps_annual_reports.html

MONTHLY WEATHER REVIEW
Coast and Geodetic Survey Annual Reports (1852 -1950)
docs.lib.noaa.gov/rescue/cgs/data_rescue_cgs_annual_reports.html

U.S. Fish Commission Annual Reports (1871-1940)
docs.lib.noaa.gov/rescue/cof/data_rescue_fish_commission_annual_reports.html